

DROUGHT MONITORING TASK FORCE

Drought Status Report

May 21, 2009

Statewide precipitation for the period from October 1, 2007 through May 18, 2009 was normal (91% of normal). Precipitation greater than 85% of normal is considered to be in the normal range. Statewide precipitation for the current water year (from October 1, 2008 through May 18, 2009) is now normal (87%), with below normal precipitation in only five drought evaluation areas: Middle James (84%), Northern Coastal Plain (78%), Northern Piedmont (82%), York-James (83%), and Northern Virginia (82%). Statewide precipitation from April 1st through May 18th has been above normal (127%), with all areas receiving precipitation greater than 100% of normal except for the York-James (97%). No drought evaluation region has been below normal for a period spanning two water years (the period beginning October 1, 2007), although precipitation deficits still persist in smaller sub-regions (particularly portions of the southern Shenandoah Valley, upper James River, and southern New River watersheds) due to uneven precipitation patterns. Appendix A contains precipitation tables for periods dating from October 1, 2007 provided by the Climatology Office of the University of Virginia and the Virginia Department of Environmental Quality. The monthly climatologic outlook calls for normal to above normal precipitation for the Commonwealth through the end of May of 2009. The three month outlook calls for equal chances of below normal, normal and above normal temperatures for the Commonwealth through August 2009.

The latest NOAA drought monitor indicates that the entire state is now considered to be “normal”, an improvement over a month ago, when significant portions of the state were considered to be “abnormally dry” or in “moderate drought”. The U.S. National Drought Monitor is included as Appendix B. Appendix C contains information from the national drought monitor with only Virginia displayed. No changes are forecasted for any part of Virginia in the Seasonal Drought Outlook for the United States from now through August 2009 (see Appendix D).

While the Virginia Department of Health has not reported any impacts to public water supplies that have compromised their ability to provide the needs of their customers, 23 systems (down from 24 systems in April 2009) are under voluntary water conservation requirements and 3 systems are under mandatory water conservation requirements. Of the 67 systems listed in the VDH report, 7 have been rated as having a “Better” overall water supply situation, and all other systems are reported as being in a “Stable” situation. Appendix E contains a table of waterworks from this month’s report, which includes systems that are under water conservation requirements.

The Virginia Department of Forestry reports that the spring fire season officially ended April 30. From January 1st through April 30th, the VDOF responded to 802 wild land fires that burned 6,836 acres. During the same period in 2008, a total of 948 wildfires burned 25,646 acres.

The Department of Game and Inland Fisheries reports that high stream flows during the spawning period have impacted striped bass and American shad spawning patterns, keeping fish further downstream than normal. In addition, the high flows push fish eggs and fry downstream before they can develop properly which can negatively impact year class survival. The high, muddy water has kept anglers off the rivers. DGIF staff have had difficulty collecting adult broodfish for the hatcheries due to recent water conditions. On the positive side, trout waters in western Virginia have plenty of water for stocking and the trout hatcheries are reporting good flows at all facilities. The spring trout schedule is anticipated to be completed on time with no cancellations or delays. Additionally all Department and private boating access facilities are open and operational. Frequent rains have lowered fire danger and made for a safer spring turkey season.

Reports from the Climatology Office of the University of Virginia, the National Weather Service, the Virginia Department of Environmental Quality, the United States Geological Survey, and the Virginia Department of Agriculture and Consumer Services, follow.

Report of the Climatology Office of the University of Virginia

Consistent rainfall throughout late April and especially early May has had a very favorable impact on the moisture conditions across Virginia. With higher temperatures and the growing season underway, May is not normally considered a likely month for making significant advances against deep soil or groundwater moisture deficits.

This May has proven to be an exception, at least for the western half of the state, where daytime high temperatures have averaged around 2° to 5°F below normal. This has helped to hold evaporation rates down, allowing the plentiful rains the opportunity to penetrate topsoil layers. Unfortunately, eastern portions of Virginia have not experienced this relief, with some areas having daytime high temperatures averaging above normal.

With the growing season well underway, only unusually wet and cool conditions are likely to bring further improvement until fall. Those areas currently showing significant moisture deficits will be most at risk for experiencing related problems as summer wears on. Nonetheless, as we enter hurricane season next month, the opportunity to receive substantial rainfall in excess of normal rises. In many years, tropical systems, despite the inherent problems they bring, have meant the difference between serious drought and sufficient moisture.

Report of the National Weather Service

From a rainfall perspective, this weekend's rain was widespread across the Commonwealth, but the heaviest amounts were restricted to central and southeast Virginia, where some locations received 2+ inches of rain. Although much of this week will be dry, rain chances will be increasing across the Commonwealth from Friday into next week, as a tropical/subtropical feed of moisture from the Atlantic and Gulf of Mexico surges into the region. Although most of the rain in the 6-14 day period will be of the shower and thunderstorm variety, the overall rain amounts during the period should be above normal throughout Virginia, which should allow most, if not all of the Commonwealth to end May with normal to above normal rainfall. This will allow Virginia to go into the summer of 2009 in much better shape moisture-wise than has been the case over the last 2-3 summers.

United States Geological Survey Streamflow and Ground Water Levels

Recent precipitation over most of the State has greatly improved surface-water flow conditions and ground-water levels. Almost all stream gages in the State are recording flows that are in the normal to above normal range based on May daily value statistics. Precipitation amounts and distribution is similar to last year with fairly dry weather in January to March with above normal precipitation in April and May. Lower temperatures in May have reduced moisture losses to evaporation.

Ground-water levels have shown the greatest improvement in the last month. Of the 21 observation wells, all but 3 are recording ground-water levels in the normal to above normal range. The three wells that are recording ground-water levels below normal show water levels that are rising.

Virginia Department of Environmental Quality Condition of Major Reservoirs

Consistent rainfall and relatively cool temperatures have resulted in substantial inflows to the major reservoirs in Virginia. As a result, all major reservoirs in the Commonwealth are now at or near full.

Virginia Department of Agriculture and Consumer Services Status of Agricultural Drought

According to the USDA Crop Weather Report released on May 11, 2009, 100% of topsoil moisture ranged from adequate to surplus. Persistent rain showers put a halt to field activities throughout most of the Commonwealth this week. Although the excess precipitation has been beneficial to hay fields and pastureland, producers have been reluctant to resume crop planting and hay harvesting due to continued wet conditions in the fields. Currently, the hay crop is looking good and is ready to be harvested. The only thing holding back producers from getting started is some warm, dry weather. For the corn crop that has already been planted, stands are looking extremely good, and only a few areas of low lying fields will need to be replanted. Land preparation and some initial planting for soybeans and vegetables occurred this week, although most producers are waiting for the rain to pass.

Impact on Crops:

The Shenandoah Valley is experiencing abnormally dry conditions thus far this year, according to the U.S. Drought Monitor. The valley received much-needed rain in late April and early May, though precipitation is still below normal. These rains have been beneficial to grain crops and pasture land.

The rains have prevented the harvest of small grain in the state for hay and silage. Inspectors are reporting that total yield of small grain silage and hay will be reduced and quality will be poorer because of the excess moisture.

Surface moisture is delaying planting of corn in most areas of the state. Only Central Virginia reported good stands of corn at this time. Farmers in the Valley and Tidewater areas report that they are having difficulty getting equipment into

the fields for planting corn. Even without additional rainfall, it could take up to ten days for fields to dry enough for planting to resume. Only Southwest Virginia reported fields and moisture levels were in good shape.

Impact on Livestock:

Cool weather in early April had a negative impact on grass growth, reducing available fodder. Recent rains contributed enormously to having a heavy tonnage of first-cutting hay and boosted the supply of grazing available for livestock. Topsoil moisture was heavy in late April and early May. The rain received in early May has improved livestock conditions due to an abundance of pasture forage. The rain is welcomed by grazers but is a hindrance for row crops.

Impact on Creeks, Rivers, and Wells:

All areas of the state are reporting good rainfall over the past month which has increased stream flows and filled ponds. Most areas of the state report the ground water table is nearing normal.

APPENDIX A

Precipitation departures by Drought Evaluation Region.

PRELIMINARY PRECIPITATION SUMMARY

Prepared:

5/19/09

	DROUGHT REGION	OBSERVED	May 1, 2009 NORMAL	- May 18, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	4.86	2.80	2.06	173%
2	New River	4.68	2.44	2.23	191%
3	Roanoke	4.77	2.51	2.26	190%
4	Upper James	4.61	2.49	2.13	186%
5	Middle James	4.38	2.46	1.92	178%
6	Shenandoah	4.57	2.23	2.34	205%
7	Northern Virginia	5.01	2.52	2.49	199%
8	Northern Piedmont	4.75	2.45	2.30	194%
9	Chowan	5.09	2.37	2.72	214%
10	Northern Coastal Plain	2.96	2.42	0.54	122%
11	York-James	3.45	2.48	0.97	139%
12	Southeast Virginia	4.35	2.24	2.10	194%
13	Eastern Shore	2.73	2.04	0.69	134%
	Statewide	4.52	2.47	2.05	183%

	DROUGHT REGION	OBSERVED	Apr 1, 2009 NORMAL	- May 18, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	7.45	6.56	0.89	114%
2	New River	7.57	5.99	1.57	126%
3	Roanoke	7.91	6.31	1.60	125%
4	Upper James	7.91	5.89	2.03	134%
5	Middle James	7.35	5.80	1.55	127%
6	Shenandoah	7.89	5.15	2.74	153%
7	Northern Virginia	9.15	5.82	3.33	157%
8	Northern Piedmont	8.30	5.74	2.56	145%
9	Chowan	7.19	5.80	1.38	124%
10	Northern Coastal Plain	5.80	5.51	0.29	105%
11	York-James	5.60	5.78	-0.18	97%
12	Southeast Virginia	6.74	5.49	1.25	123%
13	Eastern Shore	5.25	4.96	0.29	106%
	Statewide	7.49	5.89	1.60	127%

	DROUGHT		Mar 1, 2009	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	11.36	10.81	0.55	105%
2	New River	11.94	9.66	2.27	124%
3	Roanoke	12.14	10.58	1.56	115%
4	Upper James	11.42	9.68	1.75	118%
5	Middle James	11.27	9.86	1.41	114%
6	Shenandoah	9.77	8.35	1.42	117%
7	Northern Virginia	11.71	9.48	2.23	124%
8	Northern Piedmont	11.94	9.55	2.39	125%
9	Chowan	12.68	10.17	2.50	125%
10	Northern Coastal Plain	10.09	9.79	0.30	103%
11	York-James	10.57	10.47	0.10	101%
12	Southeast Virginia	12.56	9.69	2.87	130%
13	Eastern Shore	9.90	9.27	0.63	107%
	Statewide	11.46	9.93	1.53	115%

	DROUGHT		Feb 1, 2009	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	13.06	14.39	-1.33	91%
2	New River	13.07	12.59	0.47	104%
3	Roanoke	13.03	13.89	-0.86	94%
4	Upper James	12.28	12.53	-0.24	98%
5	Middle James	11.91	12.98	-1.08	92%
6	Shenandoah	10.56	10.76	-0.20	98%
7	Northern Virginia	12.15	12.15	0.00	100%
8	Northern Piedmont	12.41	12.52	-0.11	99%
9	Chowan	13.53	13.34	0.19	101%
10	Northern Coastal Plain	10.38	12.93	-2.55	80%
11	York-James	11.62	14.00	-2.38	83%
12	Southeast Virginia	13.55	13.19	0.36	103%
13	Eastern Shore	10.24	12.46	-2.22	82%
	Statewide	12.31	13.06	-0.76	94%

	DROUGHT		Jan 1, 2009	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	18.00	18.12	-0.11	99%
2	New River	16.59	15.80	0.78	105%
3	Roanoke	16.29	17.81	-1.52	91%
4	Upper James	15.07	15.81	-0.74	95%
5	Middle James	14.11	16.64	-2.53	85%
6	Shenandoah	12.67	13.61	-0.94	93%
7	Northern Virginia	14.52	15.43	-0.91	94%
8	Northern Piedmont	14.57	16.04	-1.47	91%
9	Chowan	15.63	17.45	-1.82	90%
10	Northern Coastal Plain	12.76	16.68	-3.92	77%
11	York-James	13.32	18.14	-4.82	73%
12	Southeast Virginia	15.17	17.35	-2.18	87%
13	Eastern Shore	12.07	16.02	-3.95	75%
	Statewide	15.07	16.70	-1.64	90%

	DROUGHT		Dec 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	22.83	21.76	1.07	105%
2	New River	19.94	18.51	1.42	108%
3	Roanoke	20.02	21.06	-1.04	95%
4	Upper James	18.52	18.76	-0.24	99%
5	Middle James	18.06	19.81	-1.76	91%
6	Shenandoah	16.29	16.20	0.09	101%
7	Northern Virginia	17.53	18.53	-1.00	95%
8	Northern Piedmont	18.14	19.32	-1.18	94%
9	Chowan	19.50	20.47	-0.97	95%
10	Northern Coastal Plain	15.72	19.96	-4.24	79%
11	York-James	17.42	21.53	-4.11	81%
12	Southeast Virginia	19.01	20.53	-1.53	93%
13	Eastern Shore	17.22	19.26	-2.05	89%
	Statewide	18.83	19.82	-0.99	95%

	DROUGHT		Nov 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	25.38	25.04	0.34	101%
2	New River	21.61	21.54	0.07	100%
3	Roanoke	23.02	24.42	-1.41	94%
4	Upper James	20.93	22.12	-1.18	95%
5	Middle James	21.16	23.32	-2.16	91%
6	Shenandoah	18.18	19.25	-1.07	94%
7	Northern Virginia	19.60	21.94	-2.34	89%
8	Northern Piedmont	20.50	23.12	-2.62	89%
9	Chowan	22.74	23.58	-0.84	96%
10	Northern Coastal Plain	19.32	23.10	-3.78	84%
11	York-James	21.78	24.90	-3.12	87%
12	Southeast Virginia	23.97	23.60	0.37	102%
13	Eastern Shore	21.94	22.20	-0.27	99%
	Statewide	21.64	23.05	-1.41	94%

	DROUGHT		Oct 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	27.15	27.92	-0.76	97%
2	New River	22.81	24.71	-1.91	92%
3	Roanoke	24.80	28.13	-3.33	88%
4	Upper James	22.33	25.37	-3.03	88%
5	Middle James	22.75	27.16	-4.41	84%
6	Shenandoah	19.81	22.44	-2.63	88%
7	Northern Virginia	21.08	25.42	-4.34	83%
8	Northern Piedmont	22.14	27.11	-4.97	82%
9	Chowan	24.19	27.16	-2.98	89%
10	Northern Coastal Plain	20.86	26.61	-5.75	78%
11	York-James	23.48	28.43	-4.95	83%
12	Southeast Virginia	25.47	27.26	-1.80	93%
13	Eastern Shore	23.05	25.41	-2.36	91%
	Statewide	23.21	26.55	-3.34	87%

	DROUGHT	OBSERVED	Sep 1, 2008	- May 18, 2009	
	REGION		NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	29.23	31.38	-2.15	93%
2	New River	25.35	28.12	-2.78	90%
3	Roanoke	29.14	32.36	-3.23	90%
4	Upper James	24.47	28.87	-4.40	85%
5	Middle James	27.96	31.29	-3.33	89%
6	Shenandoah	23.56	26.11	-2.55	90%
7	Northern Virginia	26.84	29.49	-2.65	91%
8	Northern Piedmont	27.46	31.39	-3.93	87%
9	Chowan	30.80	31.59	-0.79	97%
10	Northern Coastal Plain	25.91	30.70	-4.78	84%
11	York-James	29.40	33.33	-3.93	88%
12	Southeast Virginia	33.20	31.69	1.51	105%
13	Eastern Shore	27.16	29.02	-1.86	94%
	Statewide	27.63	30.55	-2.92	90%

	DROUGHT	OBSERVED	Aug 1, 2008	- May 18, 2009	
	REGION		NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	33.31	35.21	-1.90	95%
2	New River	29.81	31.43	-1.62	95%
3	Roanoke	33.78	36.08	-2.30	94%
4	Upper James	28.56	32.20	-3.63	89%
5	Middle James	32.76	35.11	-2.35	93%
6	Shenandoah	27.08	29.44	-2.36	92%
7	Northern Virginia	28.88	33.34	-4.46	87%
8	Northern Piedmont	30.56	35.21	-4.65	87%
9	Chowan	33.82	35.90	-2.08	94%
10	Northern Coastal Plain	28.22	34.56	-6.34	82%
11	York-James	32.04	38.20	-6.16	84%
12	Southeast Virginia	35.44	36.81	-1.38	96%
13	Eastern Shore	30.08	32.89	-2.81	91%
	Statewide	31.38	34.38	-3.00	91%

	DROUGHT		Jul 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	38.03	39.69	-1.66	96%
2	New River	33.74	35.22	-1.48	96%
3	Roanoke	37.21	40.47	-3.27	92%
4	Upper James	32.66	36.24	-3.57	90%
5	Middle James	36.59	39.52	-2.93	93%
6	Shenandoah	31.39	33.20	-1.81	95%
7	Northern Virginia	31.84	37.11	-5.27	86%
8	Northern Piedmont	34.40	39.61	-5.21	87%
9	Chowan	37.25	40.41	-3.17	92%
10	Northern Coastal Plain	31.74	39.01	-7.27	81%
11	York-James	35.75	43.30	-7.55	83%
12	Southeast Virginia	41.12	41.88	-0.76	98%
13	Eastern Shore	33.98	36.89	-2.91	92%
	Statewide	35.28	38.72	-3.44	91%

	DROUGHT		Jun 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	41.57	43.83	-2.26	95%
2	New River	36.22	39.07	-2.85	93%
3	Roanoke	40.12	44.36	-4.25	90%
4	Upper James	35.25	39.95	-4.69	88%
5	Middle James	38.71	43.03	-4.33	90%
6	Shenandoah	35.27	36.91	-1.64	96%
7	Northern Virginia	36.48	40.97	-4.49	89%
8	Northern Piedmont	39.66	43.62	-3.96	91%
9	Chowan	38.97	44.06	-5.10	88%
10	Northern Coastal Plain	36.17	42.57	-6.39	85%
11	York-James	37.88	46.71	-8.83	81%
12	Southeast Virginia	43.02	45.49	-2.47	95%
13	Eastern Shore	38.54	39.87	-1.33	97%
	Statewide	38.38	42.51	-4.13	90%

	DROUGHT		May 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	44.15	48.65	-4.50	91%
2	New River	38.79	43.28	-4.49	90%
3	Roanoke	43.96	48.69	-4.73	90%
4	Upper James	38.62	44.23	-5.61	87%
5	Middle James	42.93	47.27	-4.34	91%
6	Shenandoah	39.80	40.75	-0.95	98%
7	Northern Virginia	44.93	45.31	-0.38	99%
8	Northern Piedmont	45.85	47.84	-1.99	96%
9	Chowan	42.37	48.15	-5.79	88%
10	Northern Coastal Plain	42.42	46.73	-4.30	91%
11	York-James	40.65	50.98	-10.33	80%
12	Southeast Virginia	46.81	49.35	-2.55	95%
13	Eastern Shore	43.84	43.39	0.45	101%
	Statewide	42.59	46.77	-4.18	91%

	DROUGHT		Apr 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	48.47	52.41	-3.94	92%
2	New River	43.58	46.83	-3.25	93%
3	Roanoke	49.36	52.49	-3.14	94%
4	Upper James	43.45	47.63	-4.18	91%
5	Middle James	49.12	50.61	-1.49	97%
6	Shenandoah	45.21	43.67	1.54	104%
7	Northern Virginia	50.60	48.61	1.99	104%
8	Northern Piedmont	51.87	51.13	0.74	101%
9	Chowan	49.57	51.58	-2.01	96%
10	Northern Coastal Plain	48.38	49.82	-1.43	97%
11	York-James	46.96	54.28	-7.32	87%
12	Southeast Virginia	53.49	52.60	0.88	102%
13	Eastern Shore	48.27	46.31	1.95	104%
	Statewide	48.22	50.19	-1.97	96%

	DROUGHT		Mar 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	52.84	56.66	-3.82	93%
2	New River	46.22	50.50	-4.28	92%
3	Roanoke	52.56	56.76	-4.20	93%
4	Upper James	46.27	51.42	-5.15	90%
5	Middle James	52.42	54.67	-2.25	96%
6	Shenandoah	48.00	46.87	1.13	102%
7	Northern Virginia	53.04	52.27	0.77	101%
8	Northern Piedmont	54.96	54.94	0.02	100%
9	Chowan	53.49	55.95	-2.47	96%
10	Northern Coastal Plain	50.86	54.10	-3.23	94%
11	York-James	50.79	58.97	-8.18	86%
12	Southeast Virginia	56.42	56.80	-0.39	99%
13	Eastern Shore	50.05	50.62	-0.58	99%
	Statewide	51.41	54.23	-2.83	95%

	DROUGHT		Feb 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	56.04	60.24	-4.20	93%
2	New River	48.23	53.43	-5.20	90%
3	Roanoke	54.84	60.07	-5.23	91%
4	Upper James	48.48	54.27	-5.78	89%
5	Middle James	55.07	57.79	-2.73	95%
6	Shenandoah	50.30	49.28	1.02	102%
7	Northern Virginia	55.83	54.94	0.89	102%
8	Northern Piedmont	57.61	57.91	-0.30	99%
9	Chowan	56.33	59.12	-2.79	95%
10	Northern Coastal Plain	53.43	57.24	-3.81	93%
11	York-James	54.10	62.50	-8.40	87%
12	Southeast Virginia	60.54	60.30	0.24	100%
13	Eastern Shore	53.35	53.81	-0.47	99%
	Statewide	54.04	57.36	-3.33	94%

	DROUGHT		Jan 1, 2008	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	59.02	63.97	-4.95	92%
2	New River	49.51	56.64	-7.13	87%
3	Roanoke	55.73	63.99	-8.26	87%
4	Upper James	50.12	57.55	-7.43	87%
5	Middle James	56.12	61.45	-5.33	91%
6	Shenandoah	51.31	52.13	-0.81	98%
7	Northern Virginia	57.03	58.22	-1.19	98%
8	Northern Piedmont	58.67	61.43	-2.76	96%
9	Chowan	57.40	63.23	-5.83	91%
10	Northern Coastal Plain	54.59	60.99	-6.40	90%
11	York-James	56.80	66.64	-9.84	85%
12	Southeast Virginia	61.95	64.46	-2.51	96%
13	Eastern Shore	55.29	57.37	-2.09	96%
	Statewide	55.41	61.00	-5.60	91%

	DROUGHT		Dec 1, 2007	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	62.31	67.61	-5.30	92%
2	New River	52.11	59.35	-7.25	88%
3	Roanoke	59.04	67.24	-8.21	88%
4	Upper James	53.42	60.50	-7.08	88%
5	Middle James	59.32	64.62	-5.30	92%
6	Shenandoah	54.34	54.72	-0.38	99%
7	Northern Virginia	60.02	61.32	-1.30	98%
8	Northern Piedmont	62.02	64.71	-2.69	96%
9	Chowan	61.66	66.25	-4.60	93%
10	Northern Coastal Plain	57.70	64.27	-6.56	90%
11	York-James	60.91	70.03	-9.12	87%
12	Southeast Virginia	65.80	67.64	-1.85	97%
13	Eastern Shore	59.98	60.61	-0.63	99%
	Statewide	58.73	64.12	-5.39	92%

	DROUGHT		Nov 1, 2007	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	64.49	70.89	-6.40	91%
2	New River	52.68	62.38	-9.71	84%
3	Roanoke	59.60	70.60	-11.00	84%
4	Upper James	54.44	63.86	-9.41	85%
5	Middle James	59.99	68.13	-8.14	88%
6	Shenandoah	55.72	57.77	-2.05	96%
7	Northern Virginia	61.52	64.73	-3.21	95%
8	Northern Piedmont	63.23	68.51	-5.28	92%
9	Chowan	62.29	69.36	-7.08	90%
10	Northern Coastal Plain	58.98	67.41	-8.43	87%
11	York-James	61.71	73.40	-11.69	84%
12	Southeast Virginia	66.36	70.71	-4.35	94%
13	Eastern Shore	61.00	63.55	-2.55	96%
	Statewide	59.75	67.35	-7.61	89%

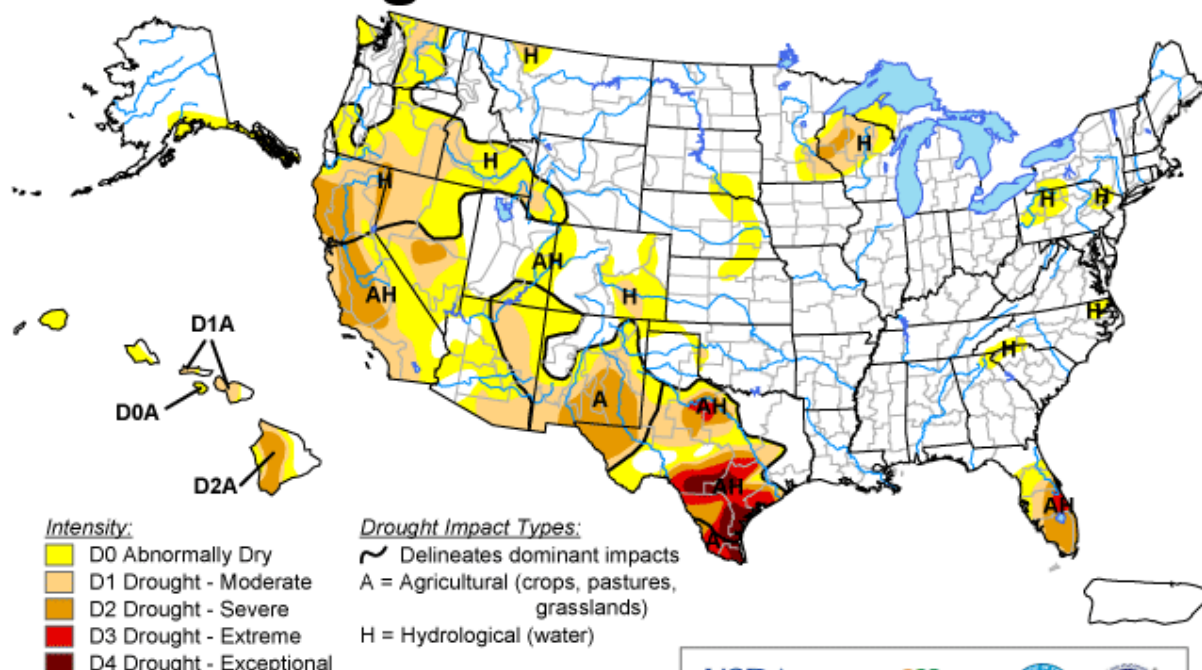
	DROUGHT		Oct 1, 2007	- May 18, 2009	
	REGION	OBSERVED	NORMAL	DEPARTURE	% OF NORM.
1	Big Sandy	67.17	73.77	-6.60	91%
2	New River	58.79	65.55	-6.77	90%
3	Roanoke	65.34	74.31	-8.97	88%
4	Upper James	58.48	67.11	-8.63	87%
5	Middle James	64.99	71.97	-6.99	90%
6	Shenandoah	59.14	60.96	-1.82	97%
7	Northern Virginia	65.75	68.21	-2.46	96%
8	Northern Piedmont	67.72	72.50	-4.78	93%
9	Chowan	67.13	72.94	-5.82	92%
10	Northern Coastal Plain	63.90	70.92	-7.02	90%
11	York-James	66.24	76.93	-10.69	86%
12	Southeast Virginia	71.52	74.37	-2.85	96%
13	Eastern Shore	64.68	66.76	-2.08	97%
	Statewide	64.37	70.85	-6.49	91%

APPENDIX B

U.S. Drought Monitor

May 19, 2009

Valid 8 a.m. EDT



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, May 21, 2009

Authors: M. Rosencrans, D. Miskus, A. Artusa, CPC/NOAA

APPENDIX C

U.S. Drought Monitor Virginia

May 19, 2009
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	99.7	0.3	0.0	0.0	0.0	0.0
Last Week (05/12/2009 map)	98.1	1.9	0.0	0.0	0.0	0.0
3 Months Ago (02/24/2009 map)	1.1	98.9	22.4	0.0	0.0	0.0
Start of Calendar Year (01/06/2009 map)	63.0	37.0	24.7	0.0	0.0	0.0
Start of Water Year (10/07/2008 map)	57.8	42.2	25.1	1.6	0.0	0.0
One Year Ago (05/20/2008 map)	66.9	33.1	7.6	0.0	0.0	0.0



Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 D2 Drought - Severe	

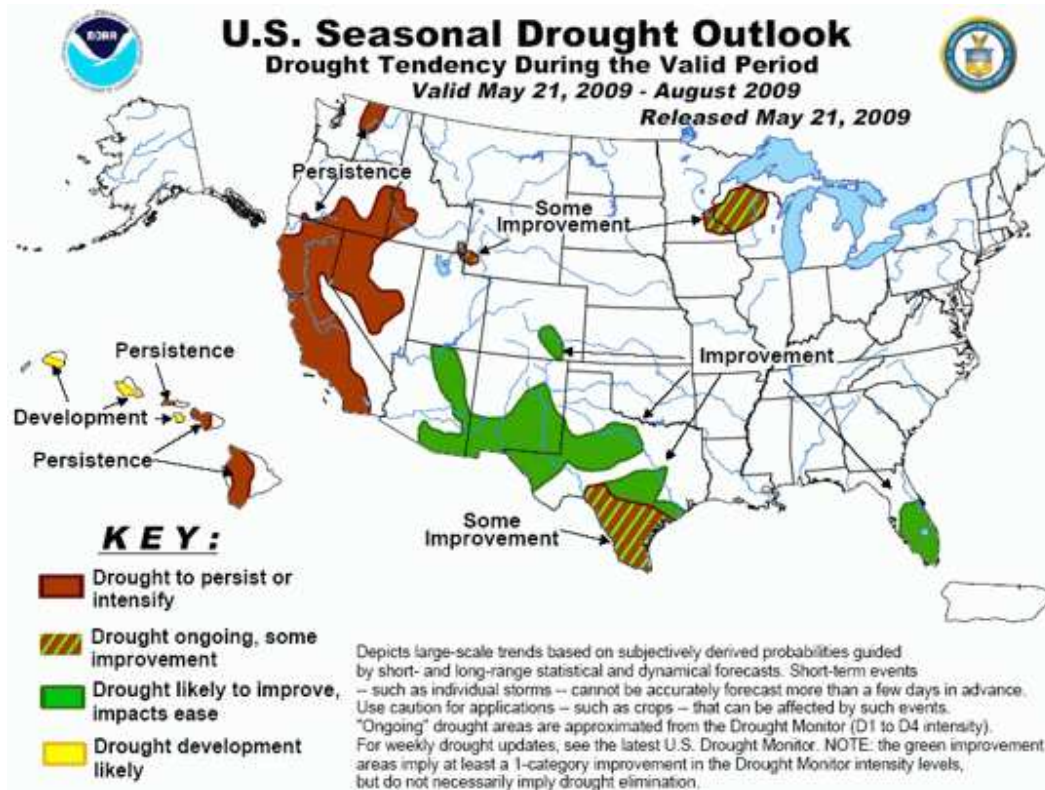
The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements

<http://drought.unl.edu/dm>



Released Thursday, May 21, 2009
Author: M. Rosencrans/D. Miskus/A. Artusa, CPC/NOAA

APPENDIX D



APPENDIX E

Condition of Public Water Supplies

March 13, 2009

ODW Drought Situation Report

Date: **5/12/09**

	Restriction totals
Mandatory	3
Voluntary	23
Total	26

N-None B-Better
M-Mandatory S-Stable/Same
V-Voluntary W-Worse

PWSID	Waterworks	Source Name	Restrictions	Situation	Population Served
2023720	Town of Troutville	Five Drilled Wells	N	S - Town reported the pumping rate of their No. 3 well dropped from 123 gpm to 40 gpm. The pumping rates of the other four wells are the same.	500
2065250	Fluvanna Correctional Center for Women	Mechunk Creek and on-site Raw Water	V	S - Reservoir is full. Water	1,650

		Reservoir		restrictions will continue however to conserve water.	
3053280	DCWA Central (Dinwiddie County)	Appomattox River Water Authority (ARWA)	V	S - 05/06/09 - Voluntary restrictions began on 7/29/08.	6,800
3081550	GCWSA - Jarratt	Nottoway River	N	S - 05/06/09 - Waterworks production rate reduced due to lower demand; river level sufficient to allow plant operation at 2.0 mgd.	7,190
3093120	Isle of Wight County	Suffolk	V	S - 05/11/09 - Obtains water from Suffolk. Follows Suffolk's lead on conservation.	1,284
3550050	Chesapeake - Western Branch system	City of Portsmouth	V	S -05/11/09 This portion of the city is consecutive to (receives water from) the city of Portsmouth. City Council voted to go to voluntary	36,404

				conservation city-wide - it took effect on 24 Oct 2007. Still following Portsmouth's lead on conservation.	
3550051	Chesapeake	Northwest River, City of Norfolk Raw Water (Lake Gaston)	V	<p>B - 05/11/09 City Council voted to go to voluntary conservation city-wide - took effect on 24 Oct 2007. Continuing to follow Portsmouth's lead. Chlorides are used as an indicator of drought, the higher the levels the more concentrated the contaminant in a lesser amount of surface water. The chlorides average 39 mg/l for April 2009. Average rainfall levels for April 2009 3.62</p>	102,292

				inches.	
3550052	Chesapeake - South Norfolk system	City of Norfolk	V	S -05/11/09-This portion of the city is consecutive to (receives water from) the city of Norfolk. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Norfolk's lead on conservation.	38,706
3570150	Colonial Heights	ARWA	V	S - 05/08/09 - Lifted mandatory restrictions on 12/1/07. Voluntary restrictions currently in place.	17,286
3595250	Emporia	Meherrin River	N	S - 05/08/09 - Water flowing	5,600

				over dam, reservoir level sufficient for normal operation.	
3670800	Virginia-American Water Company (Hopewell)	Appomattox & James Rivers	N	S - 05/08/2009 - Level at intakes still sufficient to supply plant. Rainfall during March and April put plant slightly ahead of 5-year rainfall.	25000 - Primary / 42463 Total including Consecutive System (Ft. Lee)
3700500	Newport News	Chickahomony River, Skiffs Creek, Diascand, Little Creek, Harwoods Mill, Lee Hall	N	B -- 05/07/09 - Total reservoir capacity at 100.73% (must not be able to capture all the water available). Up from last report.	406,000
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	V	S - As of 05/11/09, reservoirs at 93.4% (down from 98.5% on 04/06). Historic reservoir capacity is 94.8% at this time of year. Current Avg. pumping from	261,250 - Primary / 755,617 - Total including consecutive systems (Va Beach + military bases).

				Lake Gaston = 7.5 MGD. Called for voluntary conservation 11/1/07.	
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	V	S - As of 05/08/09, reservoirs at 100% (also at 100% on 04/10). Median reservoir capacity is 100% for the month and historical average capacity is 98% (period of 1969-2008). The emergency wells are off. Called for voluntary conservation on 10/10/07.	100,400 - Primary / 120,400 Total including consecutive systems (military bases)

3800805	Suffolk	Lone Star Lakes, Cumps Mill Pond	V	<p>B -05/11/09-Will follow Portsmouth's lead and the region as far as conservation. Average reservoir levels: Southern Lakes at 88.7% capacity, for the Northern Lakes at 100.58% and Crumps Mill Pond at 103.84% The Southern Lakes are for emergency use only. Overall they are at 97.71% capacity for the reservoirs for the period (February 2009-April 2009). Operator states that for the same time period last year (February-April 2008) the overall capacities for the reservoirs was 75.98 %.Still purchasing water</p>	62,562
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				from Portsmouth per their contract, no drought measure taken to date.	
3810900	Virginia Beach	Norfolk	V	S - 05/11/09 - Obtains water from Norfolk. Called for voluntary conservation on 9/19/07.	423,743
3830850	Williamsburg	Waller Mill Reservoir	N	B - 05/10/09 - Currently at 3 inches Above original spillway, 10 inches below flash boards.	16,400
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	N	S - Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights.	200,000

				Reservoir is at full level.	
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	N	S- Purchases water from the City of Richmond and the Appomattox River Water Authority. Reservoir is at full level.	286,000
4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N	S	2,100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	S-Reservoir is full.	8,870
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	N	S-purchases water from Henrico County	2,500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	V	S- Conservation at all DOC facilities	9,300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	V	S (see Richmond)	71,000
4085770	SPRING MEADOWS-MEADOW GATE	Groundwater wells	N	S- A replacement well has been drilled and other improvements are proposed in the PER.	2,300

4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	V	S (see Richmond)	289,000
4101900	WEST POINT, TOWN OF	Groundwater wells	N	S	3,000
4127110	DELMARVA PROPERTIES	Groundwater wells	V	S -New Kent Co. encourages conservation at all county owned waterworks.	7,700
4145675	POWHATAN COURTHOUSE	Groundwater wells	N	S	2,600
4193280	COLONIAL BEACH, TOWN OF	Groundwater wells	N	S	3,300
4760100	RICHMOND, CITY OF	Surface water; James River	V	S - water levels do not affect intake; James River Regional Flow Management Plan set restrictions based on James River level for counties of Henrico, Chesterfield, Goochland, and Hanover counties, which purchase water from the City.	197,000
5143210	Town of Gretna	Georges Creek Res	N	S	2,500
5029085	Buckingham County	Troublesome Creek Reservoir	N	S	5,751
5037300	Town of Keysville	Keysville Reservoir	N	S	800

5083550	Town of Halifax	Bannister River Reservoir	N	S	1,389
5780600	Town of South Boston	Dan River	N	S	9,726
5141640	Town of Stuart	South Mayo River	N	S	1,500
5147170	Town of Farmville	Appomattox River	N	S	7,011
5011050	Town of Appomattox	Wells	V	B - Operation reports show water levels rising in the wells.	1,708
5067265	Hales Point	Wells	N	S - hauling water	46
5067348	Westlake Water Co	Wells	V	S - hauling water	620
5690400	City of Martinsville	Beaver Creek Reservoir	N	S	16,000
6033425	Lake Caroline WTP	Lake Caroline	N	S - Lake is full, but plant is OOS as of 4/5/09.	3,370
6047500	Town of Culpeper	Lake Pelham	N	S - On Friday, May 8, 2009, Lake Pelham was full.	14,200
6061200	Marshall	Groundwater	M	S - The WSA Alert Messaging Service maintains the Water Use Restriction Notice as of 5/8/2009.	2,134
6061600	Town of Warrenton	Reservoir on Cedar Run and groundwater	N	S - On Friday, 5/8/09,	11,160

				Warrenton Reservoir is full.	
6107150	Town of Hamilton	Groundwater	M	S - 5/11/09 No water supply problems. Town Council voted to maintain Mandatory water use restrictions until new Well 14 is placed in service.	2,000
6107200	Town of Hillsboro	Spring/Well	V	S - 5/11/09 Combined yield from new well and spring has not been consistently adequate to meet current demand. A leak survey revealed 10 potential leaks in the distribution system. Last ran out of water in March.	58
6107601	LCSA Raspberry Falls Subdivision	Groundwater	V	S - 5/11/09 Both wells in service. No problems with water supply - quantity. Voluntary	394

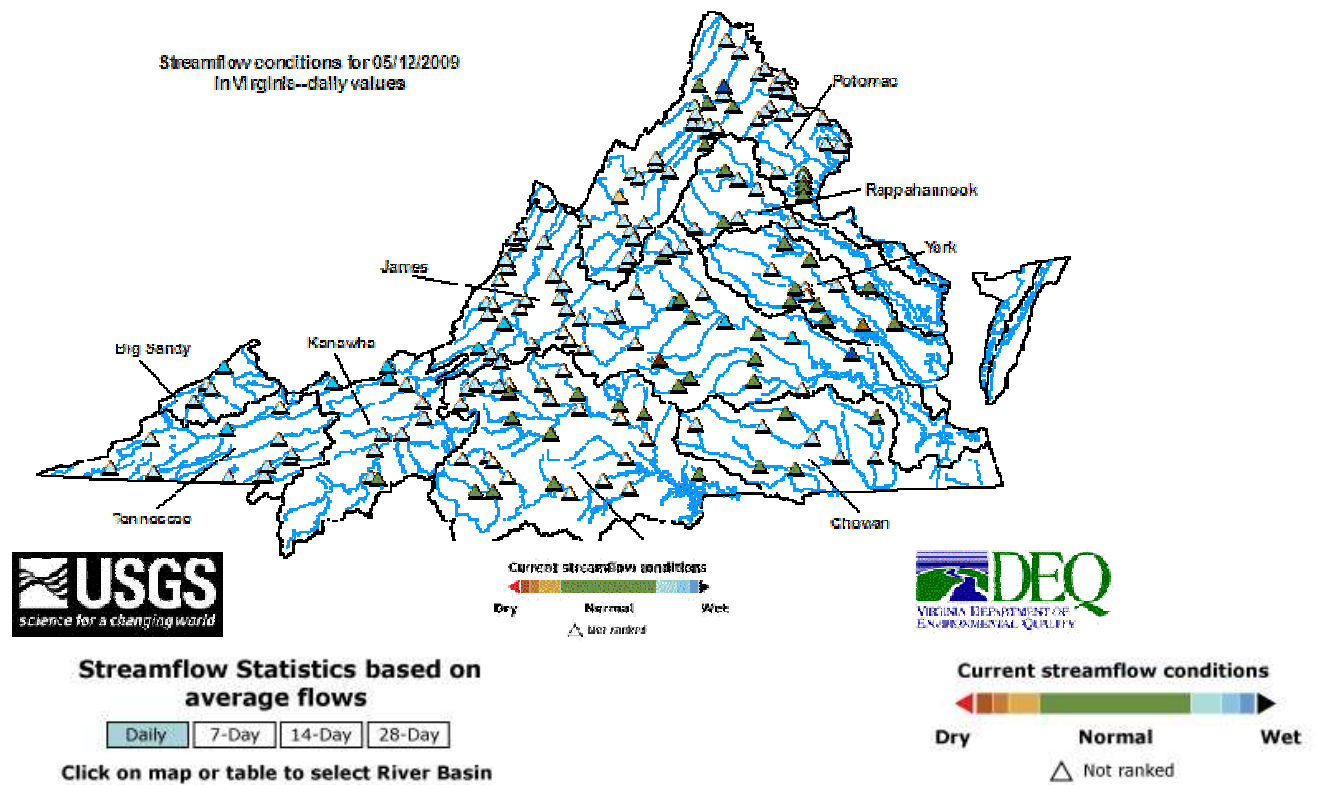
				conservation in place beginning 3/11/08 due to concerns about possible GUDI sources.	
6107400	Town of Lovettsville	Groundwater	V	S - 5/11/09 Voluntary water use restrictions remain in place; however there is no problem with water supply.	1,280
6107650	Town of Round Hill	Groundwater	V	B - 5/11/09 - No water supply problems. Groundwater levels continue to improve. Voluntary water use restrictions replace mandatory water use restrictions on 4/1/08.	3,156
6113200	Town of Madison	White Oak Run	N	S -- Stream flow remains adequate to meet normal demands.	778
6137300	Rapidan Service Authority - Rt. 15	Purchase treated surface water from Town of Orange (Rapidan River)	N	S - Town of Orange raw water availability is well above minimum.	273

6137400	Town of Gordonsville	Purchase treated surface water from RSA and Town of Orange	N	S--No water use restrictions are in place.	1,800
6137500	Town of Orange	Rapidan River	V	S - 5/8/09 - Fourteen day running average of Rapidan River flow is 977 cfs (withdrawal restrictions are imposed below 44 cfs).	4,500
6137999	Rapidan Service Authority - Wilderness and Lake of the Woods	Rapidan River	N	Rapidan River flow has been at an adequate level.	11,331
6153260	Woodbridge Mobile Home Park	Groundwater	M	S -- 5/11/09 Low water pressure problem continues. Waterworks continues to have low pressure due to inadequate sources and leaks in the distribution system. This problem is indirectly related to drought as source problems	320

				<p>existed previously. A new well was completed in November 2008. Developmental Testing completed in December 2008, all water quality results reviewed by VDH ODW. Owner's engineer met with VDH ODW on 4/8/09 to kick off design effort.</p>	
6177280 and 6177300	Spotsylvania County	Rappahanock River, Motts Reservoir, Hunting Run Reservoir, Ni Reservoir	N	<p>S - River flow averaging 1000cfs over past week. S - Motts reservoir down 2 ft. S - Ni Reservoir is full.</p>	79,315
6179100 and 6179775	Stafford County	Smith Lake and Abel Lake	N	<p>S - Smith and Abel Lakes are full. In June 2008, water supply emergency from 2007 was</p>	93,669

			rescinded with county wide conservation requested.	
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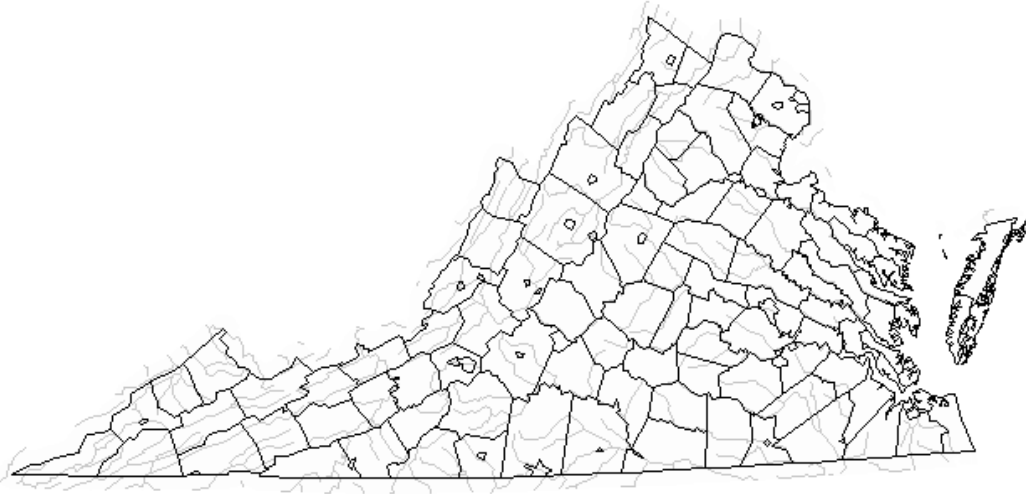
APPENDIX F



APPENDIX G

Drought Watch -- USGS State Information on Drought Map of below normal 7-day average streamflow

Wednesday, May 20, 2009



Explanation - Percentile classes				
Low	≤ 5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

APPENDIX H

Virginia Climate Response Network

May 12, 2009

Virginia Climate Response Network

Hover mouse over site for information.

Click site symbol to open page with well information.

